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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/622,299	09/11/2000	Nissim Garti	HES 2 0001	9706

7590 02/26/2002  
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EXAMINER

LOVERING, RICHARD D

ART UNIT PAPER NUMBER

1712

DATE MAILED: 02/26/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

*it must  
see Pursues WO96/39357*

T.D-8

# Office Action Summary

Application No.  
09/622,299

Applicant(s)  
GARTI ET AL.

Examiner  
LOVERING

Group Art Unit  
1712

— The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address —

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- ☒ Responsive to communication(s) filed on SEPT. 11 & OCT. 23, 2000
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- ☒ Claim(s) 12-30 is/are pending in the application.
- Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- ☒ Claim(s) 12-30 is/are rejected.
- ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- ☐ Claim(s) \_\_\_\_\_ are subject to restriction or election requirement

## Application Papers

- ☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119 (a)-(d)

- ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).
- ☒ All ☐ Some\* ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
- ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_
- ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

\*Certified copies not received: \_\_\_\_\_

## Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other \_\_\_\_\_

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### DETAILED ACTION

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 12-19, 22, 24, 25 and 27 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Balogh et al 5,938,934. The instantly-claimed method for producing nano-material particles is anticipated by Balogh et al (esp. Ex. 11d referring to Ex 11c; Examples 16 and 18, noting also abstract; and col. 6, lines 46-55 as to the size range of 1-15nm), or is at least clearly within the preview of Balogh et al., and thus would have been obvious therefrom to one having ordinary skill in the art at the time applicants' invention was made. *As to claim 15 herein, the water used in Balogh et al, would be "nonfreezing" because of its electrolyte content.* Addressing the 103 aspect of this ground of rejection: as to claim 14 herein, while examples of Balogh et al may not specifically disclose nano-material particles having the size range of 1-5nm, it would have been obvious to one skilled

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in the art at the time applicants' invention was made to control reaction conditions, eg.

Concentrations of reactants, in the Balogh et al method to obtain nano-material particles in the range of 1-5 nm when the ultimate intended use makes such small size particles necessary or desirable.

4. <sup>not done</sup> Claims 19, 20 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Balogh et al above in view of Wilcox <sup>D</sup> on 5,147,841. The especially pertinent portions of Balogh et al are pointed out in the preceding paragraph. While Balogh et al. Do not disclose using an inverse micellar solution (or microemulsion) or DDAB in their method: as to claims 19 and 20 herein, it would have been obvious to one skilled in the art at the time applicants' invention was made to use an inverse micellar solution (or microemulsion) in the method of Balogh et al to take advantage of the stability they teach (col. 2, lines 39-50), and as to claim 26 herein, it would have been obvious to one skilled <sup>disclosed by Higgins</sup> in the art at the time applicants' invention was made to use DDAB as an additional surfactant in the method of Balogh et al to realize the advantage taught by Wilcox <sup>G</sup> on (col. 6, lines 42-58).

5. <sup>not done</sup> Claims 19, 20, 23 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Balogh et al above in view of Higgins <sup>G</sup> et al 5,879, 715. The especially pertinent portions of Balogh et al. are pointed out in paragraph 3 above. While Balogh et al may not disclose the using a microemulsion including CTAB and octane in their method, it would have been obvious to one skilled in the art at the time applicants' invention was made to do so to realize the advantage of low related production costs taught by Higgins et al in col. 4, lines 41-43.

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6. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Balogh et al above in view of Yadav et al <sup>K</sup>6,228,904. The especially pertinent portions of Balogh et al. Are pointed out in paragraph 3 above. While Balogh et al do not disclose the use of PMMA, it would have been obvious to one skilled in the art at the time applicants' invention was made to use the PMMA of Ex. 3 of Yadav et al in the method of Ex. 16. Of Balogh et al so that said PMMA forms a matrix for the nanoscopic metal composites of Balogh et al., thus preparing an ultimate product having desired electrical properties such as resistivity. See Yadav et al (col. 5, lines 43-48; and col. 1, line 49-col. 2, line 62, as well as Ex. 16).

7. Claims 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Balogh et al above in view of El-Sayed <sup>J</sup>6,090,858. The especially pertinent portions of Balogh et al are pointed out in paragraph 3 above. While Balogh et al. do not disclose the use of hydrogen as a reducing agent, it would have been obvious to one skilled in <sup>the</sup> art at the time applicants' invention was made to use the hydrogen of El-Said (abstract <sup>in col. 3, 5, 6, 7</sup>) in lieu of hydrazine in Ex. 16 of Balogh et al., since the substitution of one old, well-known reducing agent for another is not of patentable significance..

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

X OK

9. Claims 12-30 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for transition metals, alloys, metal oxides and ceramics as to the

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“nanomaterial” (spec. Page 1, 1st paragraph) does not reasonably provide enablement for synthetic resins, eg. Polyamides or polytetrafluoroethylen<sup>e</sup>s, as to the “nanomaterial”. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims. The chemistry of synthetic resins is substantially different from that of transition ~~met~~<sup>met</sup>als, alloys, metal oxides and ceramics, and the disclosure of this application provides no enablement as to preparing nanoparticles of polyamides or polytetrafluorethylen<sup>e</sup>s. It would have involve more than routine experimentation on the part of one having ordinary skill in the art to produce nanoparticles of synthetic resins.

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

OK  
11. Claim 12, 13 and 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. a.) Claim 12 recites a Markush group (as to the precursors) which is not considered proper for the reasons that it is indefinite as to scope and incomplete as to its membership in not reciting-- the group consisting of -- after “from” in line 4;

b.) Claim 13 is vague and indefinite as to scope in “nonfreezing water”, because the <sup>prob R'</sup>metes and bounds of the expression is not clear. <sup>As</sup> stated in paragraph 3 above, electrolyte containing water would be one type of nonfreezing water; and c.) Claim 27 is indefinite in that

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the "Fe, Mg and Al chlorides... and transition metal salts of Fe, Co, Ni, Cu, Ru, Rh, Pd, Ir and Pt" lack antecedent basis in claim 12 because they are neither surfactant nor alkoxides.

12. Claim 21 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2<sup>nd</sup> paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

13. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record doesn't disclose or fairly suggest the instantly claimed method of producing nanomaterial particles in which the solution comprises liquid crystalline media.

14. Applicants are required to insert the following sentence on page 1 of the specification between the title and the first line:-- This application is a 371 of PCT/1199/00097 filed February 16 1999--.

15. The remaining references listed on the attached form PTO-892 are cumulative to the references applied herein, and/or further show the state of the art.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Lovering whose telephone number is (703) 308-0443. The examiner can normally be reached on Monday-Friday from 7:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Dawson, can be reached on (703) 308-2340. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

RLovering:evh

2/21/02

*Richard D. Lovering*  
RICHARD D. LOVERING  
PRIMARY EXAMINER  
GROUP ~~1200~~ 1700

